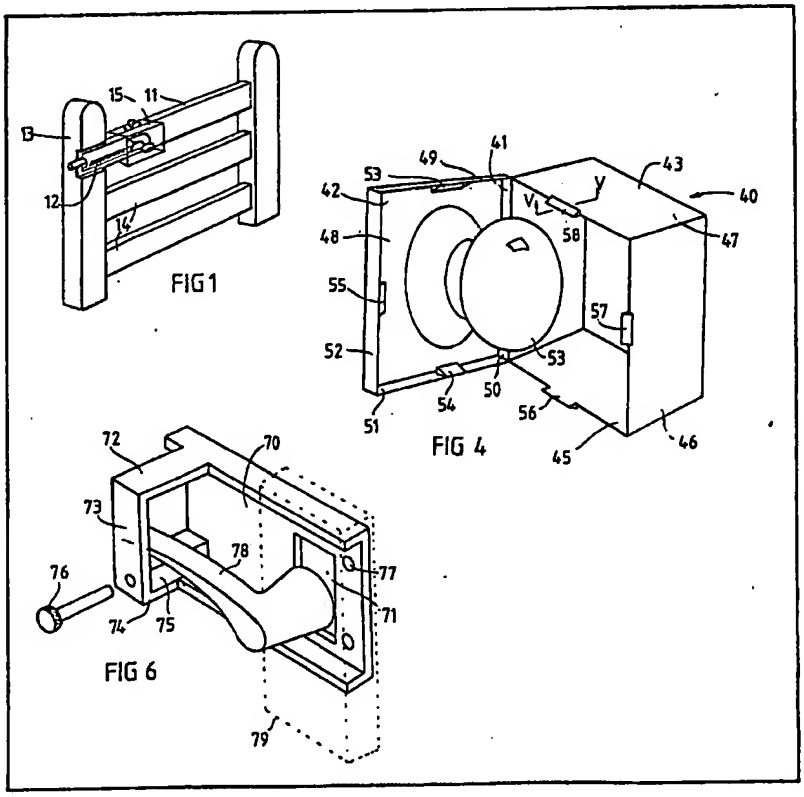
(12) UK Patent Application (19) GB (11) 2 088 463 A

(21) Application No 8125839
(22) Date of filing 25 Aug 1981
(30) Priority data
(31) 8027555
(32) 26 Aug 1980
(33) United Kingdom (GB)
(43) Application published
9 Jun 1982
(51) INT CL³
E05C 13/02
(52) Domestic classification
E2A 420 422 PB
(56) Documents cited
GB 1563295
GB 1378668
GB 798265
(58) Field of search
E2A
(71) Applicant
Patrick James May,
Primrose Cottage,
madron, Penzance,
Cornwall
(72) Inventor
Patrick James May
(74) Agents
K. R. Bryer,
Coosehecca, Chacewater,
Truro, TR4 8QU
Cornwall

(54) **A child safety device for a closure securing member**

(57) A safety device for a closure securing member such as a bolt, latch, door knob or lever of a gate or door comprises a cover (15, 40, 73) which at least partly covers a closure securing member (12, 53, 78) and is pivotable between a closed and an open position in the former of which can be retained by cover retaining means which may be a turnbuckle (27), screw clamping means (76) or snap engagement detents (53, 54, 55; 56, 57, 58). The cover retaining means are all positioned and/or formed in such a way that they require the application of a physical force or the use of manual dexterity greater than that which can be applied by a child so that the closure securing member is not operable by a child when the cover is in position.



GB 2 088 463 A

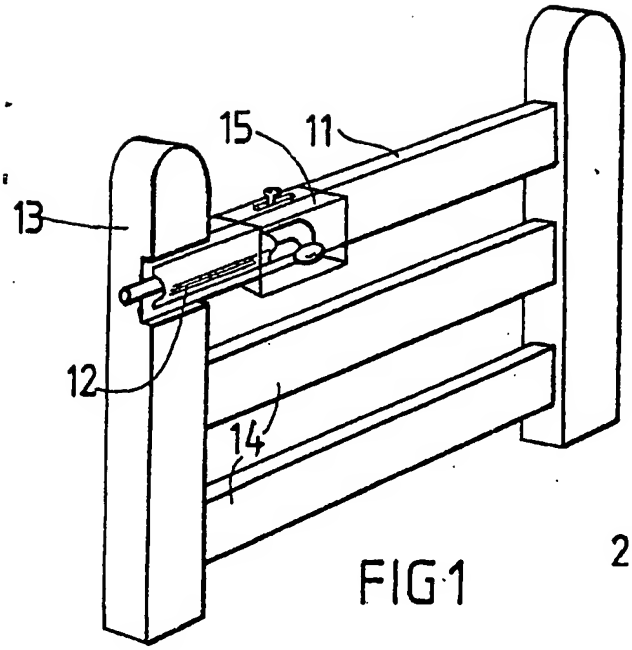


FIG 1

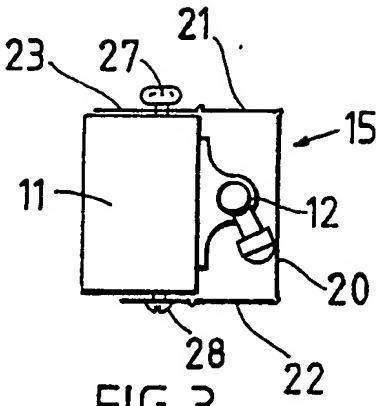


FIG 3

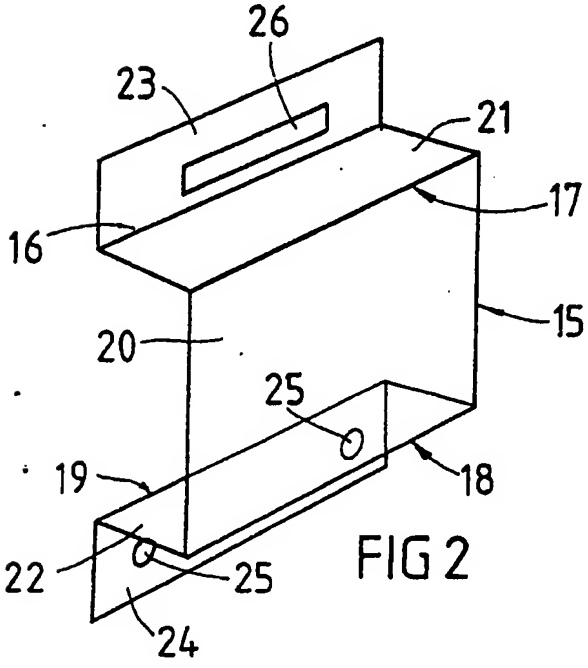


FIG 2

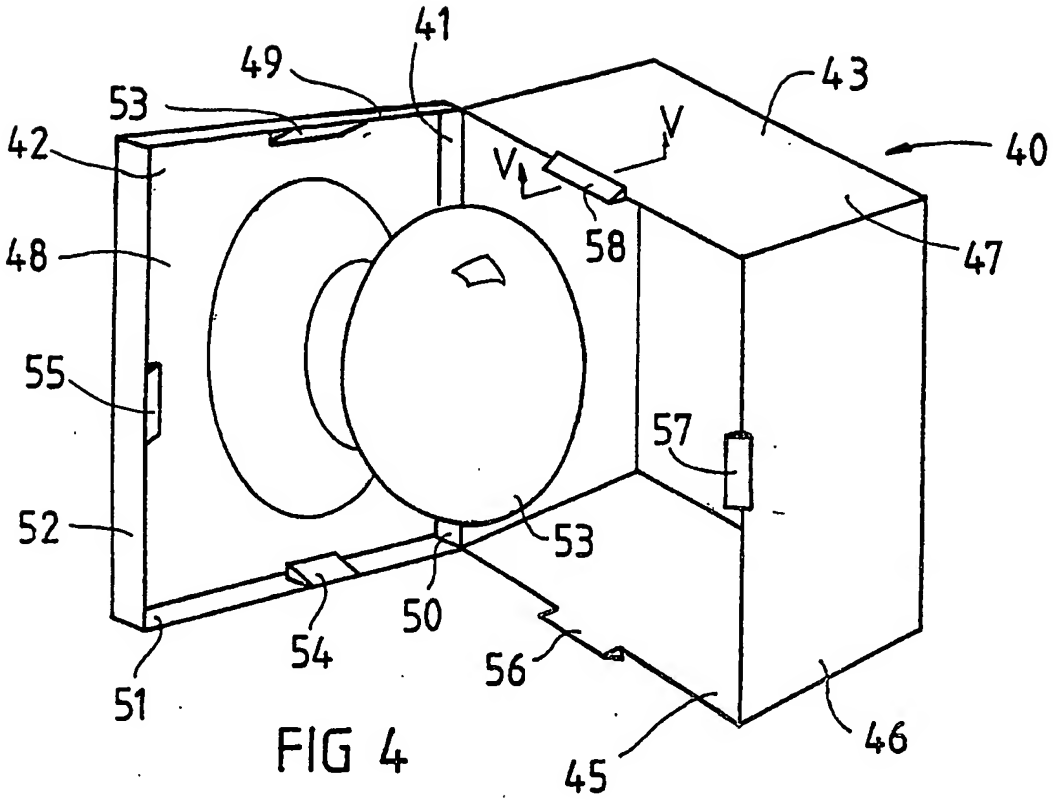


FIG 4

FIG 5

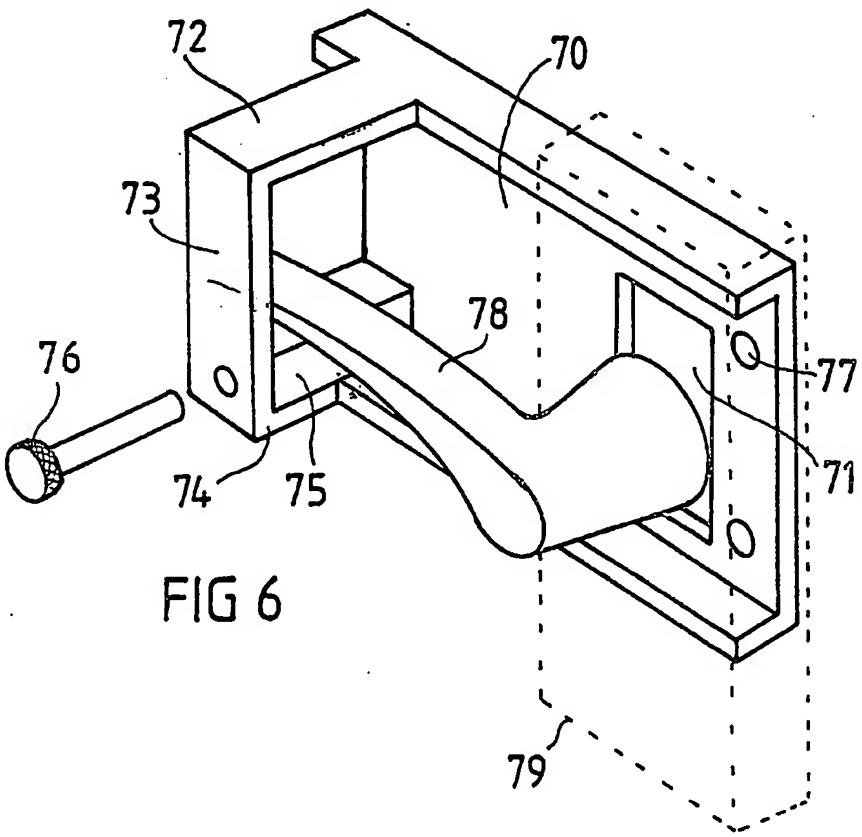


FIG 6

SPECIFICATION

A child safety device for a closure securing member

The present invention relates to a safety device for a closure securing member, and particularly to such a safety device which is adapted for use on doors and gates.

As used in this specification the term "closure" will be understood to refer to any form of closure member for closing an opening, such as a hinged or sliding door for a room or cupboard, a gate or window or any other type of opening. Further, the term "closure securing member" will be understood to relate to any kind of mechanical contrivance for holding a closure as defined above in a closed position. In particular it is intended that the term should encompass bolts and latches such as are often used on gates, and door knobs and levers used on both internal and external doors.

The technical problem which the present invention seeks to solve is that of providing means for temporarily preventing children from operating closure securing members and thereby gaining access to cupboards or rooms from which they are intended to be excluded (for reasons of safety or otherwise) whilst leaving such a closure securing members operable by adults. For example, many garden gates are secured by bolts or latches which are positioned relatively low down on the gate and can be easily reached by young children. This can lead to danger of children opening a gate and gaining access to the street or road, with the consequent risk of children wandering off; this is undesirable, apart from the danger of traffic, because particularly with very young children there is a substantial risk of them simply getting lost and being unable to find their way home. The risk is greater with younger children, but it is not always possible for young children to be closely supervised and it is often desirable for them to be left outside in a garden or a yard to paly alone. Security for garden gates has until now frequently been merely a question of frequent checks by adults to ensure that the children have not opened the gate, and this is obviously not only inadequate as a safety measure, but also causes unnecessary stress and worry which could be avoided if adequate measures were available.

Embodiments of the invention thus provide a security for closure which can be used *inter alia* for gates, which will allow quick release by adults whilst nevertheless effectively preventing young children from opening the closure. Such a device must be cheap, effective, easily released by adults and provide a high degree of security. It should also be easily fitted, and since it will only be required while the children are very young, it must be easily removable when it is no longer required, preferably leaving little or no long-term mark on the closure.

According to the present invention there is provided a child safety device for a closure securing member, (as hereinafter defined) mountable on the closure adjacent the closure securing member, the device including a cover member which is movable between an open position and a closed position in which latter position it extends over the closure securing member to obstruct it sufficiently to prevent operating movement thereof from taking place, and means for retaining the cover member in the said closed position.

Since closure securing members such as bolts and latches are frequently located at a level sufficiently low to be reached by a small child it is essential that a child safety device of the type to which the present invention relates should make it impossible for a child to open the gate even though the bolt or latch is within reach. Preferably the retaining means are manually operable to secure the cover in the closed position to release it therefrom, and are adapted such that the operation thereof requires manual operations and or physical strength above a threshold level, such that it cannot be released by a child.

The said retaining means may be mountable on the closure separately from the cover member although, in a preferred embodiment the said cover retaining means are formed as part of the base to the device mountable on the closure together with the said cover member.

The said cover member may prevent operating movement of the closure securing member by obstructing access thereto otherwise operating interengaging the said closure securing member, or alternatively may operatively interengage with the closure securing member to prevent it from moving to a closure-released position.

The said retaining means may include manually actuable clamping screw means; such devices can be clamped by an adult with a force greater than that which can be applied by a child. Alternatively a spring loaded ratchet such as that used on the screw cap of many medicine bottles may be employed.

If the retaining means can be suitably concealed then a simple device such as a turnbuckle retaining arrangement may be provided for holding the cover member in the closed position instead of a clamp screw. The cover member may have a slot in the edge adjacent the retaining means, into which slot the turnbuckle retaining arrangement or clamp screw is received when the cover is closed.

The cover member may be of box-like form having a top and sides, or may simply comprise a plurality of generally planar panels joined together along substantially parallel lines by hinge means. In the former case it is particularly advantageous to form the cover retaining means as cooperating snap engageable detents on the cover member and the base member, which require the application of a force above a threshold value for the release thereof. Preferably in such an arrangement two such detents are spaced at least on opposite sides of the cover member at a distance nearly the span of an adult hand. A child cannot therefore operate the device because it cannot span the distance with one hand.

Attempts to release the detents using two hands can be frustrated by providing a third detent is located in a position laterally of a line adjoining the said two detents at a position such that it can be operated by the same hand only if it is an adult size hand.

Of course, the cover member will require to be sufficiently rigid to prevent a closure securing member from being forced past it, and for this reason it is preferably made of a rather stiff plastics material such as polypropylene. The use of such a plastics material also has advantages in terms of economy and ease of manufacture, low maintenance requirements and ease of fitting. Polypropylene also had the advantage that a multi-part structure can be formed with ligament hinges joining the cooperating parts so that a simple one piece moulding can provide the majority of the device.

Various embodiments of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which;

Figure 1 is a perspective view of a garden gate fitted with a bolt and a child safety device formed as an embodiment of the present invention;

Figure 2 is a perspective view of the child safety device illustrated in Figure 1, showing it in a different configuration;

Figure 3 is a sectional view taken on the line III-III of Figure 1;

Figure 4 is a perspective view of an embodiment specifically adapted for doors with knobs;

Figure 5 is a scrap cross section taken on the line V-V of Figure 4; and

Figure 6 is a perspective view of an embodiment adapted for use on doors having lever type handles.

Referring now to the drawings and particularly to Figures 1 to 3, there is shown a child safety device fitted to a garden gate 11 having a bolt 12 of conventional construction. The gate shown comprises uprights 13 and horizontal rails 14 although, as will be appreciated, any form of gate capable of receiving a bolt is suitable for receiving the safety device of the present invention. In the drawings a wooden gate is illustrated although the invention can be used on metal gates with suitable modification for different attachment arrangements. The safety device of the invention comprises a cover, generally indicated 15 formed as a single integral moulding of polypropylene with four parallel ligament hinges 16, 17, 18, 19 allowing the device to be fitted in a number of different configurations as will be described below. The two parallel ligament hinges 17, 18 define, with perpendicular lateral edges of the cover 15 a main cover plate 20 flanked along each hinged edge by wall panels 21, 22 which are joined by the hinges 16, 19 to two terminal flanges 23, 24 respectively. The lower flange 24 is provided with two fixing holes 25 for receiving screws or bolts by means of which the device 15 is to be attached to a gate, and the upper terminal flange 23 has an elongate slot 26 for engagement with a retaining member 27 illustrated in the drawings as a turnbuckle (see Figure 3).

In Figures 1 and 3 the device is shown fitted to the lower edge of the uppermost rail 14 by two screws 28 passing through the holes 25. The turnbuckle 27 is positioned on the upper edge of this rail 14. The dimensions of the device are such that the two wall panels 21, 22 are approximately parallel to one another and perpendicular to the face of the rail 14 carrying the bolt 12. With the dimensions shown the cover panel 20 is then held spaced from the front face of the rail 14 by a distance sufficient to prevent the operating arm of the bolt 12 from being swung out to its working position. In other words the bolt is held down in a locked position. The turnbuckle is preferably one which becomes tightened in its operating position to make it difficult for a young child to turn it to its release position. In alternative embodiments retaining means may be formed in such a way that snap engagement takes place requiring relatively high force to be applied to release it, or alternatively a latching arrangement may be provided which requires an understanding of the mechanism before it can be released so that, again, a child could not remove the cover from the bolt.

To accommodate bolts of different sizes the wall panels 21, 22 are made relatively large in their transverse dimension, that is in the distance between the hinges 16, 17 and between the hinges 18, 18 so that when the two wall panels 21, 22 are arranged parallel to one another the separation between the front face of a rail such as the rail 11 and the cover plate 20 is sufficiently great to accommodate the largest bolt likely to be encountered on a domestic gate. To make the device function when a smaller bolt is used it is simply necessary to position the retaining means 27 further from the position adopted by the hinge 16 when the flange 23 is secured to the gate so that the cross sectional shape is trapezoidal rather than rectangular. In the illustrated arrangement, for example, the retaining member 27 may be positioned on the underface of the rail 11 rather than on the upper face as shown.

The operation of the device is very simple, the turnbuckle holds the flange 24 firmly against the rail 11 so that, in the position shown in Figure 3, the bolt cannot be operated. Perfect security against child opening the gate is therefore obtained. When it is required for an adult to open the gate it is merely necessary to turn the turnbuckle, indicated 27 to align it with the slot 26, raise the flange 23 to release the recess 26 from the turnbuckle and pivot the cover 20 outwardly hinging above one or both of the hinges 16, 17 to gain access to the bolt which can then be released. This operation takes only a moment and the manner in which it works can be readily seen even by someone not familiar with the mechanism and coming upon it for the first time. To facilitate such release operations by persons unfamiliar with the mechanism it is convenient if the device is made from a transparent material so that the way it works will be immediately obvious from a visual inspection.

In Figure 4 the device shown is adopted for a door the closure securing member of which has a knob for its operation. Access to the knob can be controlled by means of a cover 40 hingedly mounted by a hinge 41 to a base 42.

The cover 40 comprises a generally rectangular open box of five panels, a cover panel 43 and four

side panels 44, 45, 46 and 47. The cover 40 is hinged along the free edge of the side 44 by the hinge 41 to the base 42 which, itself, comprises a base panel 48 and four small upstanding sides 49, 50, 51 and 52. The base panel 48 has a central opening (not shown) through which projects shaft on which the door knob 53 is mounted. The base 42 may be securly fixed to the door or may be freely turnable on the door knob shaft. Since it will have no interengagement with the door knob shaft the device will prevent turning of the door knob 53 when the cover 40 is closed onto the base 42 even though the cover 40 itself may be turnable. For aesthetic reasons it may be preferable in a "loosely mounted" arrangement to have a generally cylindrical form for the cover 40 and a circular base 42 so that no significant orientation about the door knob shaft is perceptible.

In the embodiment illustrated in Figure 4 the sides 49, 51, and 52 of the base are provided with inwardly projecting detent ridges 53, 54, 55 at a central position along each side, and the sides of the cover 40, other than the side 44 which is hingedly connected along the hinge 41 to the side 50 of the base 42 are provided with outwardly projecting detents 56, 57 and 58 each detent on the cover has a generally triangular cross-section which is shown in greater detail in Figure 5. The detent 58 on the side panel 43 has an inclined ramp surface 59 facing the detent 53 on the base panel 49 and a surface 60 perpendicular to the panel 43. Likewise, the detent 53 on the base panel 49 has an inclined surface 61 facing the detent 58 and a surface 62 which lies perpendicular to the plane of the base panel 49. As the cover 40 is closed the two inclined surfaces 59, 61 engage one another and cause inward flexural movement of the cover side panel 43 and rather less outward flexural movement of the base side panel 49 which is of much narrower extent. A similar effect occurs on the side panels 45 and 46 of the cover and 51, 52 of the base. When the cover 40 is fully closed the detent 58 snaps over the detent 61 so that the perpendicular surfaces 60, 62 are in contact with one another. Because they are perpendicular to the planes of the cover panels they prevent the cover from being opened simply by pulling on the cover. In order to release the cover for opening movement it is necessary to flex the appropriate side wall panels 43, 45, 46 inwardly to release the engagement between the contacting detent walls 62, 60 (and the corresponding walls of the detents 57, 58 and 55, 54) By making the cover about 3 or 4 inches across it is impossible for a child to operate all three detents at once, even if the necessary force can be applied, and consequently once the cover 40 is closed the door knob 53 is "child proof" from that side of the door. The door is not locked, however, and is openable from the other side simply by turning the knob in the usual way, the cover device not having any effect on the manner in which the door knob operates, but merely denying access to the door knob on the side on which it is fitted. Should an adult wish to open the door from that side it is simply a question of releasing the detents to open the cover 40 and turning the knob in the usual way. Even if releasing three detents at once should prove difficult, an adult can span two of the detents, for example the detents 56 and 58 with one hand, whilst releasing the detents 57 with the other.

The embodiment of Figure 4 can also be employed for lever type door handles, but for such application the base 42 and cover 40 would have to be made of a more elongate rectangular form, and the aperature in the base for allowing passage of the lever shaft would have to be off set towards one end or the other.

The embodiment of Figure 6 is intended to lock a lever-type door handle against movement from one side of the door. In this embodiment a base 70 has an aperture 71 in the form of a slot adjacent one end thereof, and an upstanding lug 72 at the other end carries a locking lever 73 with a locking block 74 at its free end. Through the locking block passes a threaded screw 75 turnable by means of a knurled enlarged head 76 and engageable in a threaded opening in the base 70.

The base 70 is secured in position on a door by means of screws of other fixing means passing through holes 77 suitably positioned on the base so as to be covered by the escutcheon plate with which a door lever is provided. In Figure 6 the escutcheon plate is illustrated in broken outlines and identified with the reference numeral 79. In this way the door is not marked by the fixing screws 77 except in a concealed position so that the appearance of the door is not deleteriously affected by fitting a lever lock. Indeed it may be possible to position the holes for the screws 77 in alignment with the holes for fixing screws (not shown) for the escutcheon plate so that these latter serve also to retain the lever locking device. The precise position of the base 70 is determined in relation to the shape of the lever handle 78 such that when the locking lever 73 is in its closed position with the screw 75 engaged in the threaded hole of the base 70 the lever handle 78 rests on the locking block 74 and cannot be turned to open the door. Release of the lever is effected by turning the enlarged head 76 to unscrew the block 74, following which the lever 73 is swung outwardly to the position shown in broken outline in Figure 6 allowing the lever handle 78 to be turned in the normal way. Again, locking of the lever handle 78 in the position shown in the Figure 6 does not prevent the door being opened from the other side since conventionally the lever handle on either side of the door is independent of the other.

Alternatively, snap engagement means for retaining the block 74 on the cover 70 may be provided in place of the screw 75, such snap engagement means requiring a manual dexterity or physical force greater than can be applied by a child in order to obtain the required security.

CLAIMS

1. A child safety device for a closure securing member (as hereinbefore defined) mountable on the closure adjacent the closure securing member, the device including a cover member which is movable between an open position and a closed position in which latter position it extends over the closure securing member to obstruct it sufficiently to prevent operating movement thereof from taking place, and

means for retaining the cover member in the said closed position.

2. A child safety device as claimed in Claim 1, in which the retaining means are manually operable to secure the cover in the closed position to release it therefrom, and are adapted such that operation thereof requires manual operations and/or physical strength above a threshold level, such that it cannot be released by a child.

3. A child safety device as claimed in Claim 1 or Claim 2, including a base mountable on the closure and to which the said cover member is pivotally or hingedly attached.

4. A child safety device as claimed in any of Claims 1 to 3, in which the said cover retaining means are mountable on the closure separately from the said cover member.

5. A child safety device as claimed in Claim 1 or Claim 2 or Claim 3 in which the said cover retaining means are formed as part of the base to the device mountable on the closure together with the said corner member.

6. A child safety device as claimed in any preceding Claim, in which the said cover member prevents operating movement of the closure securing member by obstructing access thereto without otherwise operatively interengaging the said closure securing member.

7. A child safety device as claimed in any of Claims 1 to 5, in which the said cover member operatively interengages with the closure securing member to prevent it from moving to a closure released position.

8. A child safety device as claimed in any preceding Claim, in which the cover retaining member is a turnbuckle engageable through a slot in the cover.

9. A child safety device as claimed in any of Claims 1 to 7, in which the said retaining means includes manually actuable clamp screw means.

10. A child safety device as claimed in Claim 9, in which the said clamping screw means includes a wing nut or other manually turnable screw member on a threaded stud and the said wing nut or other manually turnable screw member by displacement laterally of the axis of the said stud.

11. A child safety device as claimed in Claim 9, in which the said clamp screw means include a manually turnable screw threaded member carried on the said cover and engageable with cooperating screw threaded means on the base.

12. A child safety device as claimed in any of Claims 1 to 7, in which the cover retaining means comprises cooperating snap engageable detents on the cover member and the base member, which require the application of a force above a threshold value for the release thereof.

13. A child safety device as claimed in Claim 12, in which two said detents are spaced at least on opposite sides of the cover member at a distance nearly as great as the span of an adult hand.

14. A child safety device as claimed in Claim 13, in which a third detent is located in a position laterally of a line joining the said two detents at a position such the it can be operated by the same hand only if it is an adult size hand.

15. A child safety device as claimed in any of Claims 1 to 14, in which the cover member comprises a plurality of generally planar panels joined together along substantially parallel lines by hinge means.

16. A child safety device as claimed in Claim 15, in which the said base comprises a generally planar panel joined to one of the panels constituting part of the cover member along a line parallel to the said hinge lines by a coupling which itself constitutes a hinge.

17. A child safety device as claimed in Claim 15 or Claim 16, in which the cover member and/or the base member are made from polypropylene and the said hinge means are ligament hinges.

18. A child safety device as claimed in any of Claims 15, 16 or 17 adapted for use on a gate having a bolt or latch as the closure securing member in which the panel constituting the base is adapted to be secured by a cover face of a rail of the gate, such as by screws or other fixing means, whilst the closure retaining means are mounted on an upper face of the rail.

19. A child safety device substantially as hereinbefore described with reference to Figures 1 to 3 or Figure 4 or Figure 5 of the accompanying drawings.

Printed for Her Majesty's Stationery Office by The Tweeddale Press Ltd., Berwick-upon-Tweed, 1982.
Published at the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

\~15~

PUB-NO: GB002088463A

DOCUMENT-IDENTIFIER: **GB 2088463 A**

TITLE: A child safety device for a closure securing member

PUBN-DATE: June 9, 1982

ASSIGNEE-INFORMATION:

NAME	COUNTRY
MAY PATRICK JAMES	N/A

APPL-NO: GB08125839

APPL-DATE: August 25, 1981

PRIORITY-DATA: GB08125839A (August 25, 1981)

INT-CL (IPC): E05C013/02

EUR-CL (EPC): E05B013/00

US-CL-CURRENT: **292/88**

ABSTRACT:

A safety device for a closure securing member such as a bolt, latch, **door knob** or lever of a gate or **door comprises a cover** (15, 40, 73) which at least partly **covers** a closure securing member (12, 53, 78) and is pivotable between a closed and an open position in the former of which can be retained by **cover** retaining means which may be a turnbuckle (27), screw clamping means (76) or snap engagement detents (53, 54, 55; 56, 57, 58). The cover retaining means are all positioned and for formed in such a way that they require the application of a physical force or the use of manual dexterity greater than that which can be applied by a child so that the closure securing member is not operable by a child when the cover is in position. <IMAGE>